**ABSTRACT**

Complexes of 1-Naphthoxy acetic acid of divalent transition ions, with neutral hydrazine were prepared and characterized by the spectroscopic methods, IR & UV- visible, magnetic measurements and simultaneous TG – DTA methods. They are sparingly soluble in water and ethanol, formulated as [M(N2H4)2{2- C10H7OCH2(COO)}2].4H2O where M = Co & Ni, [M(N2H4){2-C10H7OCH2 (COO)}2] . nH2O where M = Mn, Zn & Cd ; n = 0 or 1and [Cu(N2H4){2-C10H7OCH2 (COO)}2] at pH 6. IR spectra of the compounds show υN-N in 954 -983 cm-1 region corresponding to coordinated, neutral bridging N2H4 ion and the symmetric υCO and asymmetric υCO in 1363-1400 cm-1 and 1598 - 1623 cm-1 evidence the complex formation respectively. Naphthoate complexes show weight loss due to dehydration and dehydrazination from 50°C to 290 °C and a strong exothermic decomposition between 290°C and 750°C leading to the formation of corresponding metal oxides as end products. The UV-Visible spectra and magnetic moment values of the compounds reveal their geometry, probably distorted octahedral with CN 6 for Ni (II), Co (II), Zn (II) & Mn (II) and tetrahedral for Cd and square planar for Cu complex with CN 4